

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant: **Cheng Chung WANG**

Filed: **8/25/2003**

Appl. No.: **10/647,814**

Examiner: **Freay, Charles**

Conf. No.: **2353**

Art Unit: **3746**

Title: **INFLATABLE PRODUCT HAVING AN ELECTRICAL INFLATOR**

Date: **April 13, 2007**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REPLY BRIEF

Sir:

This paper is submitted in reply to the Examiner's Answer mailed on February 15, 2007.

INTRODUCTION AND SUMMARY OF ARGUMENT

There are two separate and independent reasons why Appellant should prevail in this Appeal.

The first ground is entirely a matter of claim construction, involving the single and simple term "inflatable body." The Examiner does not dispute that on Appellant's proposed construction of this term, Appellant must prevail. At no point during prosecution did the Examiner set forth his own view of the meaning of the term. The Examiner's Answer for the first time advances a proposed construction, namely, "a body that expands when filled with air or other gas." (Examiner's Answer, at 7.)¹ The only significant difference

¹ Although the Examiner criticizes Appellant for allegedly failing to address the rejections made in the prosecution of the application (Examiner's Answer, at 8), in fact pages 3-6 and 11-12 of Appellant's Appeal Brief apply Appellant's proposed claim construction to the references, and

between the Examiner's and the Appellant's respective interpretations of this claim term is that Appellant's interpretation includes the characteristic of being "substantially airtight." The law is clear that claim terms must be given their broadest reasonable interpretation, consistent with the specification. As will be set forth in detail below, the intrinsic record, considered as a whole, clearly demonstrates that the claimed "inflatable body" must be substantially airtight.

The second ground is a simple failure of proof, with regard to the scope and content of the prior art. Even using the Examiner's definition of "inflatable body," the two prior art references in question do not disclose the claimed combination, and so do not anticipate the claims of the present application.

ARGUMENT

1) When given the broadest reasonable interpretation consistent with the specification, an "inflatable body" as recited in the claims must be at least substantially airtight.

Appellant submits that the proper construction of "inflatable body" in the claims of the present application is "a substantially airtight structure that expands or swells when filled with air or other gas." Although the Examiner agrees that an inflatable body is a structure that expands when filled with air or other gas, he contends that it does not have to be substantially airtight.

Appellant respectfully disagrees. The law of claim construction is clear that the meaning of a term is derived from the relevant intrinsic and extrinsic evidence, including "the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314, 75 USPQ2d 1321, 1327 (Fed. Cir. 2005). Likewise, during prosecution, the words of a

pages 7-10 and 12-14 address the specific arguments advanced by the Examiner in support of the rejections.

claim must be given their broadest reasonable interpretation consistent with the specification. *In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000).

In the context of the present application, one cannot reasonably interpret the term “inflatable body” in light of the relevant evidence without concluding that the body must be at least substantially airtight.

First, there is the term itself—“inflatable body”—which the Examiner concedes requires at least requires a structure that expands when filled with air or other gas. The art in question here, as recited in the preamble, is that of inflatable products. In order for an inflatable body in an inflatable product to be filled with air, such that that filling process causes the inflatable body to expand, as a matter of common sense the body must be substantially airtight. It is the substantially airtight characteristic that prevents the air from escaping to the atmosphere without inflating the body.

That point is confirmed by other aspects of the claim, including the feature of a “pump ... to pump the inflatable body.” The specification makes clear that “pumping” means either bringing air from outside the inflatable body to inside the inflatable body (i.e., inflating), or bringing air from inside the inflatable body to outside the inflatable body (i.e., deflating). For example, page 9, lines 10-11 of the specification reads: “[t]he user pushes switch 421 of the electric pump 42 to pump outside air into the body 40 of the airbed.”² In the context of what it means to be “inflatable,” the specification makes clear that “after the inflating operation,” it is necessary to seal the outlet of the pump, to prevent leakage (deflation): “FIG. 6C depicts the airbed full of air, wherein the air outlet of the electric pump 30 is closed by the cap 37 to seal the airbed after the inflating operation.” (Page 6, lines 24-27.) There would of course be no need for sealing if the inflatable body were not substantially airtight.

² Also see page 5, lines 12-17; page 6, lines 20-30; page 7, lines 5-6; page 9, lines 3-13 and 20-24; page 11, lines 11-23; page 13, lines 9-18; page 14, lines 1-6 and 14-19.

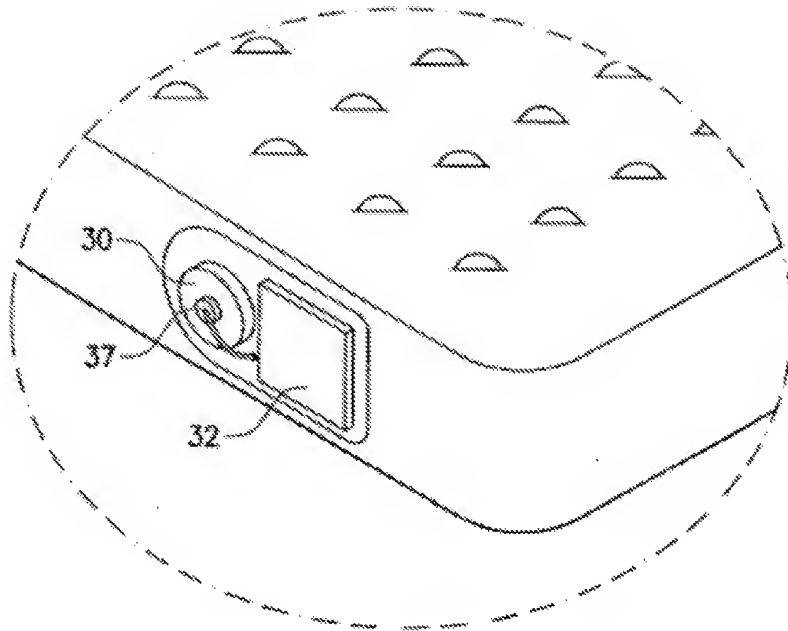


FIG. 6C

Claim 1 recites an “inflatable product” including, *inter alia*, an “inflatable body” and an electric pump to “pump the inflatable body.” Clearly, the inflatable product may also include elements that are not filled with air such that they expand or swell. For example, the inflatable product may include a strap or power cord or any number of elements for which the adjective “inflatable” would be inappropriate, even though they are part of the inflatable product as a whole. This distinction is plainly recognized in the two prior art references under consideration. In Wortman, the disclosed product is called a “pressurized mattress,” while the specific substantially airtight element filled with air so as to expand or swell is called an “inflatable cushion.” In Higgs, the disclosed product is called an “inflatable mattress system” while the specific substantially airtight element filled with air so as to expand or swell is called an “inflatable plenum.” Likewise, in the present invention, the inventor has chosen to call the overall product an “inflatable product” and the specific substantially airtight element filled with air so as to expand or swell an “inflatable body.”

In arguing against the “airtight” requirement, the Examiner cites the disclosure of a low air loss mattress in the background art of Higgs as evidence that an inflatable body does not need to be airtight. (Examiner’s Answer, at 6-7.) There are two responses to this point. First, the fact that Higgs takes special care to note this feature of his embodiment shows that it is if anything a departure from the ordinary meaning of “inflatable body.” It certainly would be improper to read this feature of Higgs into Appellant’s claims. Second, it is expressly not Appellant’s view that an inflatable body must be absolutely airtight. Rather, the “inflatable body” must only be at least substantially airtight. Higgs describes a low loss air mattress in which “a plurality of air sacs are inflated and air is permitted to leak through small holes in the sacs.” (Higgs 1:34-46.) The “small holes” are apparently of sufficiently tiny dimension such that the air sacs can be filled with air by a blower and furthermore are not immediately deflated when a user lies down on the mattress. Thus, even Higgs’ atypical construction is nonetheless substantially airtight, and thus an “inflatable body” on Appellant’s construction.

Appellant therefore submits that any reasonable interpretation of the claim term “inflatable body” consistent with the specification defines a substantially airtight structure. On this construction, the Examiner does not dispute that Appellant must prevail. The Examiner does not even address Appellant’s application of Appellant’s proposed construction to the prior art at issue. As described in detail in the Appeal Brief, neither mattress 30 of Wortman nor mattress 3 of Higgs, when taken as a whole, is a substantially airtight structure that expands or swells when filled with air or other gas. Thus, neither of these mattresses can be considered an “inflatable body” as recited in the claim, and it is the non-inflatable portions of these references that include what the examiner contends is the claimed “socket.” Thus, the structures that the Examiner identifies as “sockets” are not “built in” what clearly are the inflatable bodies in Wortman and Higgs, i.e., inflatable cushions 44 and 46 and inflatable plenum 28, respectively. Appellant therefore submits that both Wortman and Higgs fail to teach or suggest an “inflatable product” including an “inflatable body,” “a socket built in the inflatable body” and “an electric pump ... including a pump body ... wherein the pump body is wholly or partially located in the socket,” as recited in claims 1 and 2 of the present application. All of the pending claims of the application are therefore believed to be patentable over these references.

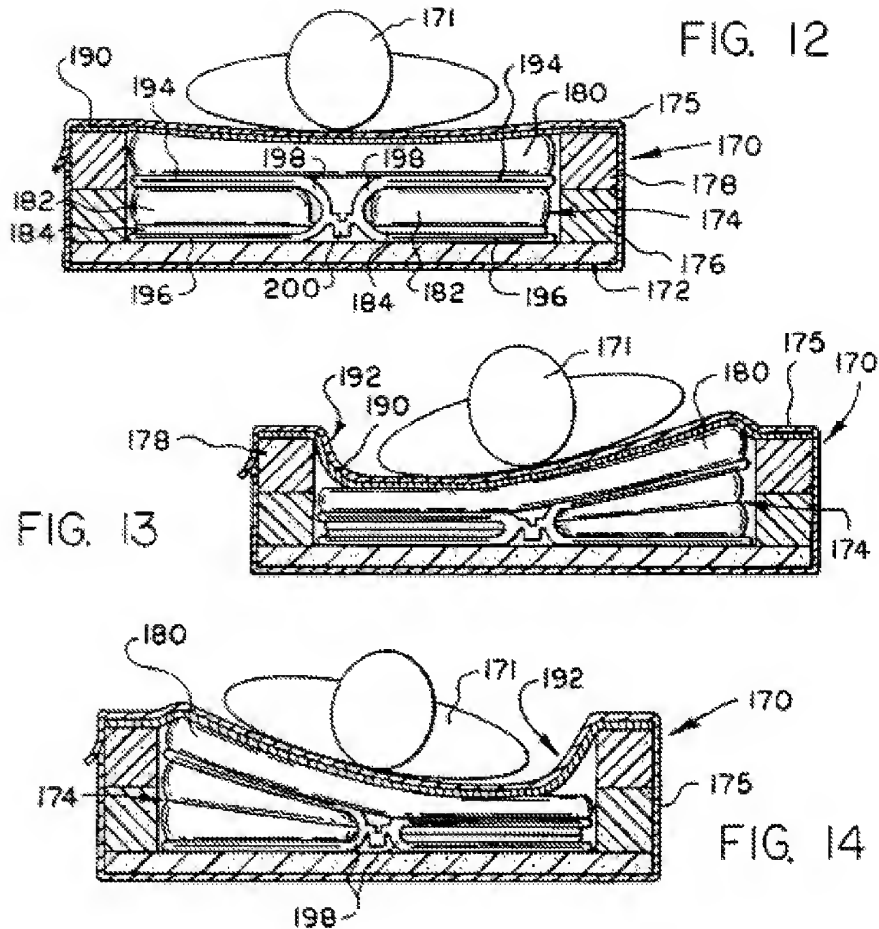
2) Even using the Examiner's definition of "inflatable body," the applied references do not anticipate the claims of the present application.

Applying his construction ("a body that expands when filled with air or other gas"), the Examiner contends that "when taken as a whole," the mattresses disclosed in Wortman and Higgs are "inflatable bodies." (Examiner's Answer, at 10.)

Appellant submits that even applying the Examiner's construction, mattress 30 in Wortman and mattress 3 in Higgs, taken as a whole, cannot be fairly viewed as inflatable bodies.

The Examiner argues that the "inflatable body" in Wortman comprises cribs 34, 36, inflatable cushions 44, 46, and cloth mattress cover 48. (Examiner's Answer, at 10.) Cribs 34 and 36 define a rigid framework in and on which the inflatable cushions 44 and 46 are disposed, and cloth mattress cover 48 is disposed over the cribs and inflatable cushions. However, when taken as a whole, the body defined by the inflatable cushions 44, 46, cribs 34, 36 and cloth mattress cover 48 in Wortman is not filled with air by the electric blower. To the contrary, only inflatable cushions 44 and 46 are filled with air by the electric blower. Furthermore, the body as a whole does not expand when inflatable cushions 44 and 46 are filled with air. To the contrary, only inflatable cushions 44 and 46 expand.

This is evident in Figs. 12-15 and 25, 26 of Wortman, which are referred to by the Examiner in the Examiner's Answer. For example, Figs. 12-15 are reproduced below:



As can be seen in the figures, the cribs (176, 178) maintain exactly the same shape and dimension when the inflatable cushions (180, 182) are in either a deflated state (Figs. 13, 14) or an inflated state (Fig. 12). Thus, the cribs are not “filled with air” by the electric pump, and they never move, let alone expand, even when the inflatable cushions are filled with air. To say that the cribs form a part of the inflatable body merely because they surround the inflatable cushions is tantamount to saying that the room in which the mattress is located is also a part of the “inflatable body.”

With respect to the inclusion of cloth mattress cover 48 as part of the alleged “inflatable body” (or zippered mattress cover 175 in Figs. 12-15), Appellant notes that this element rises and falls only because it is disposed on top of an inflatable cushion. This does not

mean the cover and the inflatable cushion taken together as a whole is an “inflatable body” as recited in claims. Furthermore, insofar as the alleged “socket” is not built in the cloth mattress cover, it is irrelevant whether or not this element is part of the alleged “inflatable body.”

The same argument holds true for the foam material defining hollow compartment 22 in Higgs. This is particularly evident in Fig. 5 of Higgs, reproduced below:

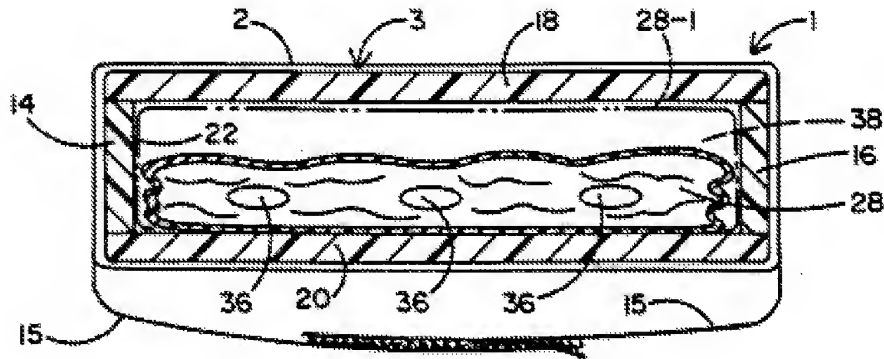


FIG. 5

As can be seen in the figure, the foam material defining the hollow compartment maintains the same shape and dimension when inflatable plenum 28 is in either a deflated state (28) or an inflated state (28-1). The foam material is not “filled with air” by the electric blower, and it does not even move, let alone expand, when the inflatable plenum is filled with air.

The Examiner also makes reference to Higgs’ use of the figure of speech “inflate the mattress” in col. 1, line 62 of the patent. However, throughout the patent, Higgs makes literally dozens of references to the “filled with air so as to expand” characteristic of the inflatable plenum (inflated, uninflated, fill with air, pressurize, etc.). Appellant submits that one of ordinary skill in the art would easily and clearly distinguish between a product such as an inflatable mattress system (i.e., a product including as one of its elements an

inflatable element), and the actual inflatable element itself. There is no question that Higgs' inflatable mattress system is a product that includes an inflatable element. There is also no question that the inflatable element in Higgs is the inflatable plenum. Higgs is therefore simply using the same dichotomy of the present claims, which distinguish between an inflatable product and its inflatable body component.

It is therefore Appellant's belief that if a person of ordinary skill in the art were to apply the Examiner's definition of "inflatable body" to the Wortman and Higgs disclosures, he or she would find neither mattress 30 of Wortman nor mattress 3 of Higgs taken as a whole to be an "inflatable body" as recited in the claims of the present invention. Appellant therefore submits that, even if the Examiner's construction were to be adopted, the references fail to anticipate the claims.

Conclusion

For the reasons advanced above, Appellant respectfully but forcefully contends that claims 1, 2 and 5-8 are patentable over the cited references. Reversal of all rejections is courteously solicited.

Respectfully submitted,

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